

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A recording medium including recorded data, comprising:

a control data area including pits formed along tracks, with data recorded therein, wherein pits ~~formed in some portions of the tracks are shifted from a track center to left and/or right to thereby form~~ formed as intermittent or alternate wobbled pits, and wherein pits formed in other portions of the tracks of the control data area are substantially along the track center to thereby form formed as straight pits, and the wobbled pits are formed at least one of intermittently and alternately with the straight pits within the control data area.

2. (Currently Amended) A method of forming a recording medium, comprising:

forming pits in a control data area along tracks, with data recorded therein, wherein pits ~~formed in some portions of the tracks are shifted from a track center to left and/or right to thereby form~~ formed as intermittent or alternate wobbled pits, and wherein pits formed in other portions of the tracks of the control data area are substantially along the track center to thereby form formed as straight pits, and the wobbled pits are formed at least one of intermittently and alternately with the straight pits within the control data area.

3. (Currently Amended) A method of reproducing data from a recording medium, comprising:

detecting control information recorded in pits formed along tracks in a control data area, wherein pits ~~formed in some portions of the tracks are shifted from a track center to left and/or right to thereby form~~ formed as intermittent or alternate wobbled pits, and wherein pits formed in other portions of the tracks of the control data area are substantially along the track center to thereby form formed as straight pits, and the wobbled pits are formed at least one of intermittently and alternately with the straight pits within the control data area; and

generating the control information to reproduce main data recorded with modulation in straight pits formed along tracks of a main data area of the recording medium.

4. (Currently Amended) ~~[[A]]The method of reproducing according to claim 3, further comprising~~ wherein said detecting step comprises:

converting signals reflected from the wobbled pits into electrical signals~~reproducing data recorded with modulation in the straight pits formed along the tracks of the recording medium using the detected information; and~~

extracting the control information by applying the electrical signals to a logic circuit.

5. (Currently Amended) ~~[[A]]The method of reproducing~~ according to claim 4, further comprising:

reproducing the main data~~recorded on the recording medium~~ using the reproduced data~~generated control information~~, and

outputting the reproduced main data~~recorded on the recording medium~~.

6. (Currently Amended) ~~[[A]]The method of reproducing~~ according to claim 3, wherein said detecting step detects the control information recorded in pits from a difference signal between a right and a left electric signals, generated by a beam reflected from the pits formed along the tracks.

7. (Currently Amended) ~~[[A]]The method of reproducing~~ according to claim 6, wherein said ~~reproducing~~detecting step further detects the main data~~recorded with modulation~~ from a high-frequency electric signal generated by a beam reflected from the straight pits~~formed along the tracks~~.

8. (Currently Amended) A method of recording data on a recording medium, comprising:

recording data in pits formed along tracks in a control data area, wherein pits~~formed~~ in some portions of the tracks are ~~shifted from a track center to left and/or right to thereby form~~ formed as intermittent or alternate wobbled pits, and wherein pits~~formed~~ in other portions of the tracks of the control data area are ~~substantially along the track center to thereby form~~ formed as straight pits, and the wobbled pits are recorded at least one of intermittently and alternately with the straight pits within the control data area.

9. (Currently Amended) An apparatus for reproducing data from a recording medium, said apparatus comprising:

a detection unit adapted to detect control information recorded in pits formed along tracks in a control data area, with data recorded therein, wherein pits formed in some portions of the tracks are shifted from a track center to left and/or right to thereby form pits formed as intermittent or alternate wobbled pits, and wherein pits formed in other portions of the tracks of the control data area are substantially along the track center to thereby form pits formed as straight pits, and the wobbled pits are recorded at least one of intermittently and alternately with the straight pits, and wherein the detection unit converts signals reflected from the pits into electric signals; and

a signal processor adapted to process the electric signals to generate the control information and to process main data recorded with modulation in straight pits formed along tracks of a main data area of the recording medium.

10. (Canceled)

11. (Currently Amended) ~~An~~The apparatus for reproducing data according to claim ~~[[10]]9,~~
further comprising:

wherein the~~[[a]]~~ signal processor ~~for detecting information encoded in a deviation shape of the pits formed along the tracks of the recording medium and shifted from the track center to right and/or left~~ generates the control information from ~~[[a]]~~ low-frequency components difference signal between left and right portions of the electric signals and for reproducing generates the main data recorded with modulation in the straight pits formed along tracks of main data area of the recording medium from high-frequency components of the electric signals based on the detected information.

12. (Currently Amended) The apparatus according to claim ~~[[11]]9,~~ further comprising:

a controller wherein, coupled to said detection unit and said signal processor processes and outputs, to control the detection of the control information and the processing of the main data recorded on the recording medium using the detected data, wherein the controller controls said signal processor to output the main data based on the control information.

13. (Currently Amended) The apparatus according to claim ~~[[9]]~~12, wherein ~~arrays of said pits shifted from the track center are formed intermittently at more than two places~~the controller controls said detection unit to detect the control information by a push-pull method.

14. (Currently Amended) The recording medium ~~of~~according to claim 1, wherein the data includes ~~copy~~ protection information used for controlling reproduction and/or recording of main data.

15. (Currently Amended) The method ~~of~~according to claim 2, wherein the data includes ~~copy~~ protection information used for controlling reproduction and/or recording of main data.

16. (Currently Amended) The method ~~of~~according to claim 3, wherein the ~~data control information~~ includes ~~copy~~ protection information for controlling reproduction and/or recording of main data, and

wherein the detecting step detects the protection information.

17. (Currently Amended) The method ~~of~~according to claim 8, wherein the data includes ~~copy~~ protection information used for controlling reproduction and/or recording of main data.

18. (Currently Amended) The apparatus ~~of~~according to claim 12~~[[9]]~~, wherein the ~~data control information~~ includes ~~copy~~ protection information used for controlling reproduction and/or recording of the main data, and

wherein the controller controls the reproduction of the main data in response to the protection information.

19. (New) The recording medium according to claim 1, wherein the data in the control data area is recorded in the wobbled pits by bi-phased modulation.

20. (New) The recording medium according to claim 14, wherein the protection information is repeatedly encoded in plural arrays of the wobbled pits.

21. (New) The recording medium according to claim 1, wherein the control data area comprises arrays of the wobbled pits and arrays of the straight pits periodically.
22. (New) The recording medium according to claim 1, wherein arrays of the wobbled pits and arrays of the straight pits in the control data area are of different length.
23. (New) The recording medium according to claim 1, further comprising:
a main data area including main data recorded with modulation in straight pits formed along tracks.
24. (New) The method according to claim 2, wherein the data in the control data area is formed in the wobbled pits by bi-phased modulation.
25. (New) The method according to claim 15, wherein the same protection information is repeatedly encoded in plural arrays of the wobbled pits.
26. (New) The method according to claim 2, wherein the control data area comprises arrays of the wobbled pits and arrays of the straight pits periodically.
27. (New) The method according to claim 2, wherein arrays of the wobbled pits and arrays of the straight pits in the control data area are of different length.
28. (New) The method according to claim 3, wherein the detecting step detects the control information recorded in the wobbled pits by bi-phased modulation, in the control data area.
29. (New) The method according to claim 3, wherein the detecting step detects arrays of the wobbled pits and arrays of the straight pits having different length respectively in the control data area.